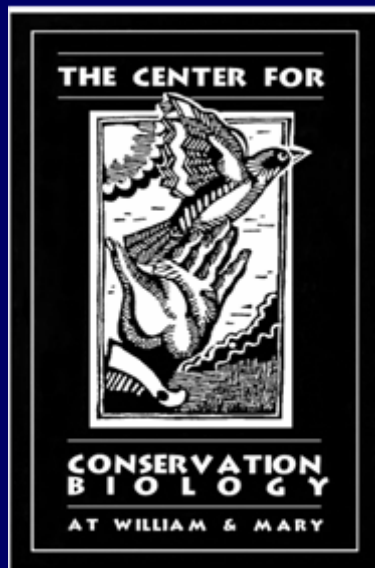


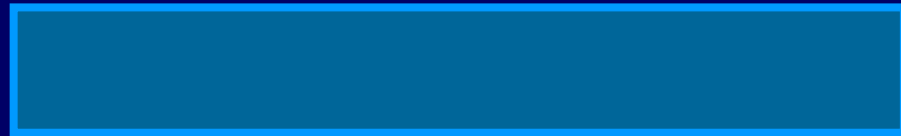
The Constraints of Urbanization on Population Goals



Mike Wilson, Bryan Watts, & Bart Paxton

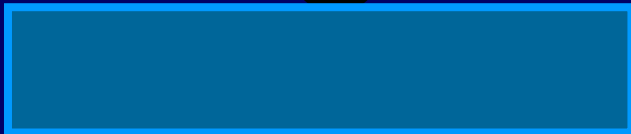
**Center for Conservation Biology
College of William and Mary**

Management Potential/Constraints

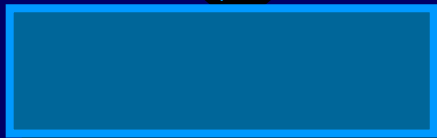


Total Land

Lost to system (e.g. urbanization)



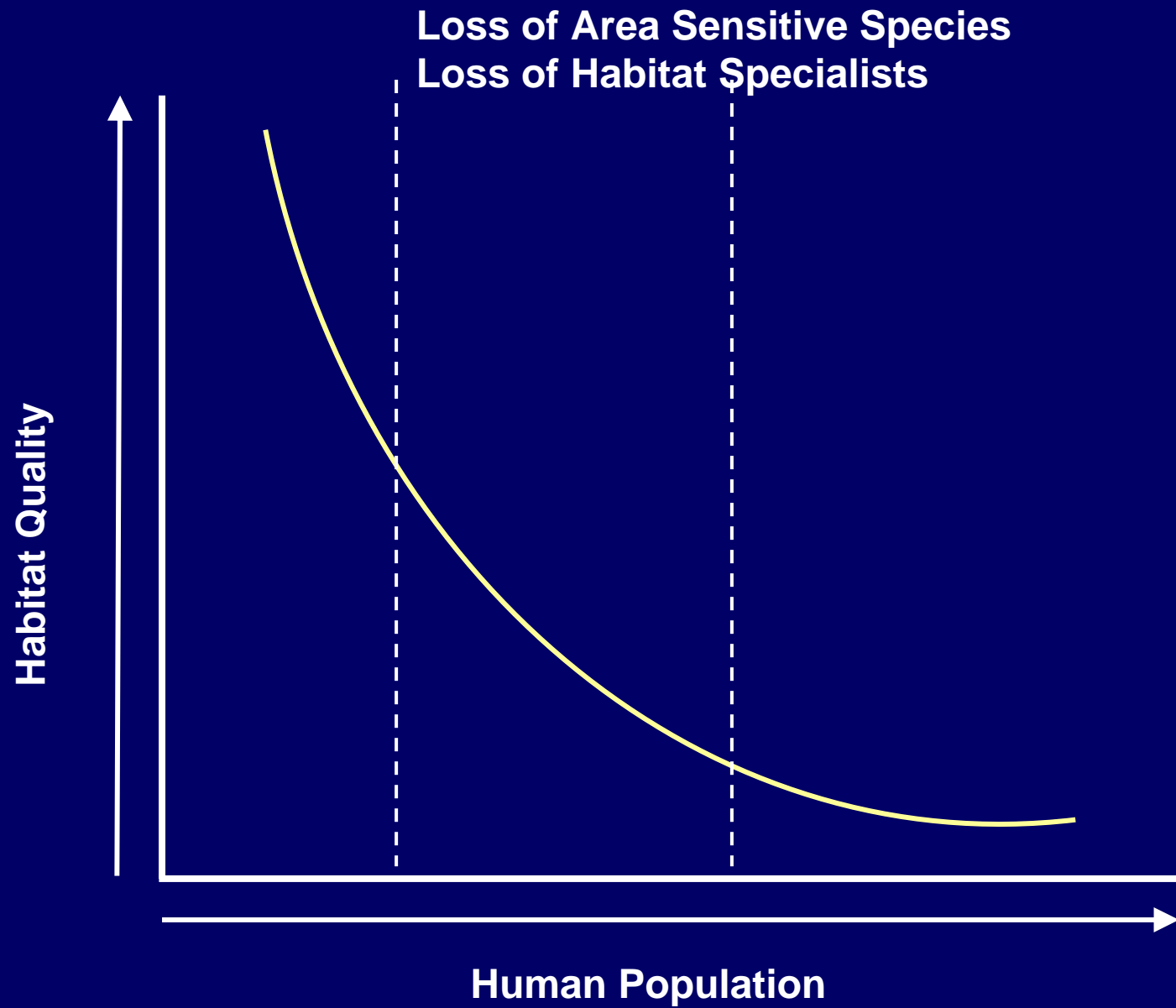
Natural constraints (e.g. wetlands)



Use constraints (e.g. cemeteries, monuments)



Open to Management

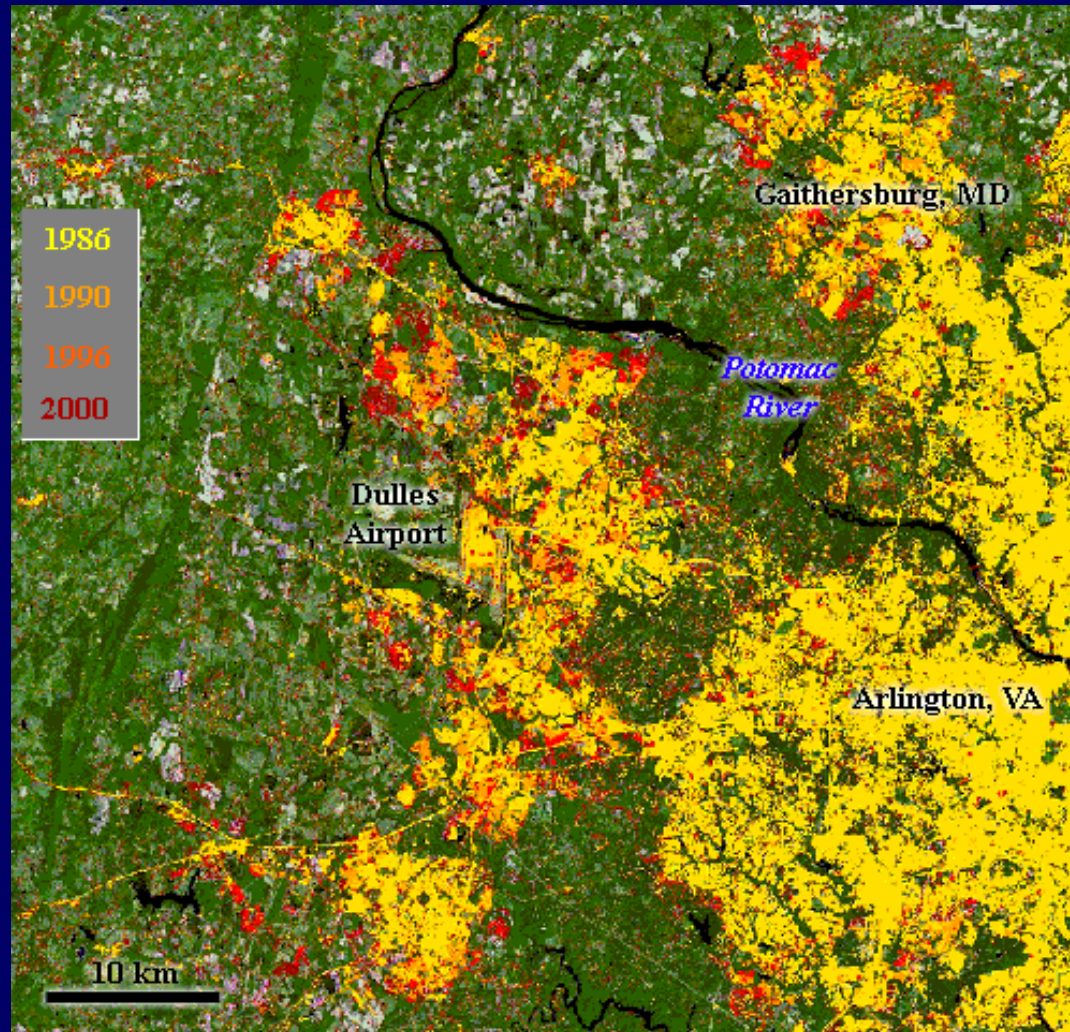




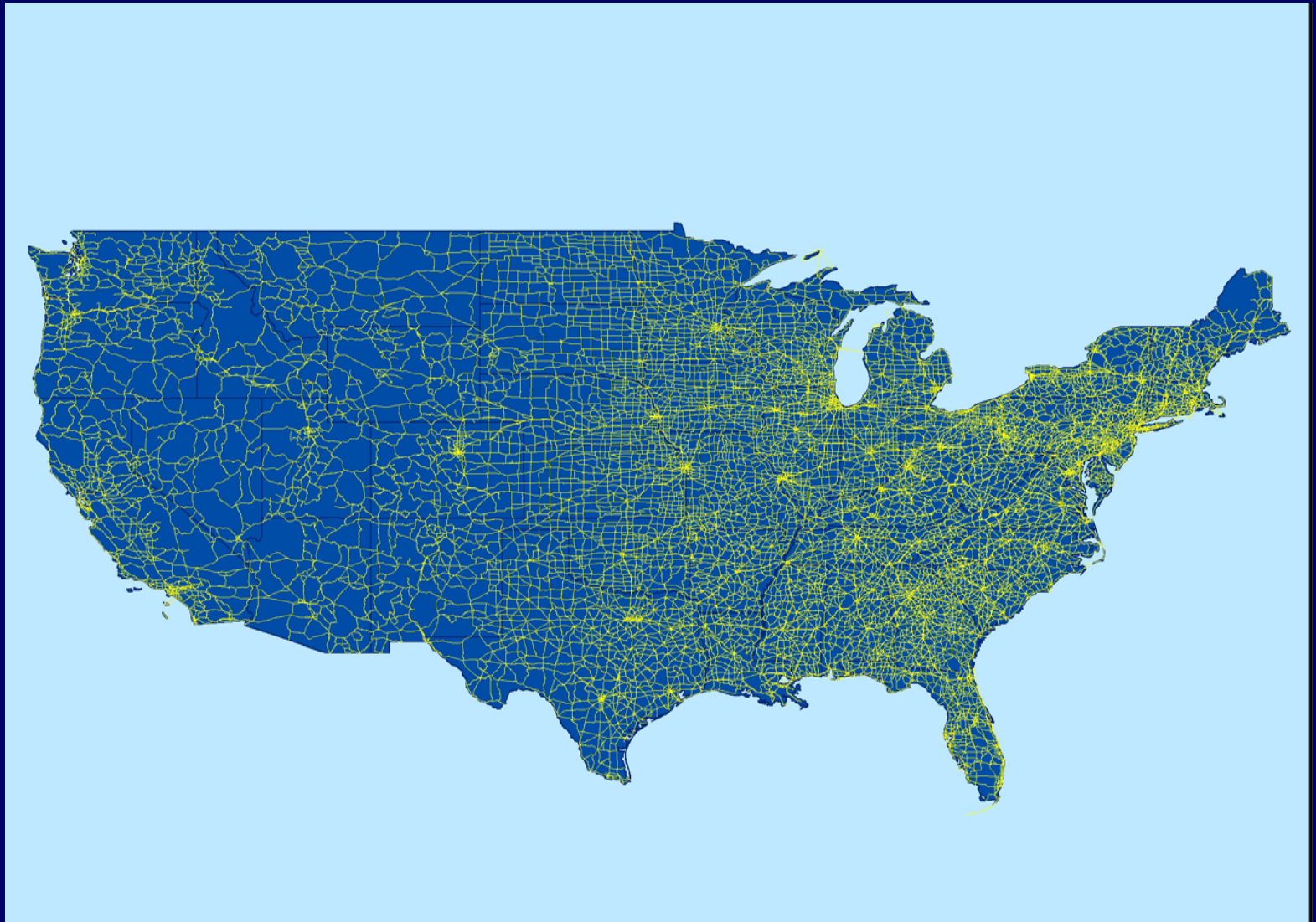




Land Cover



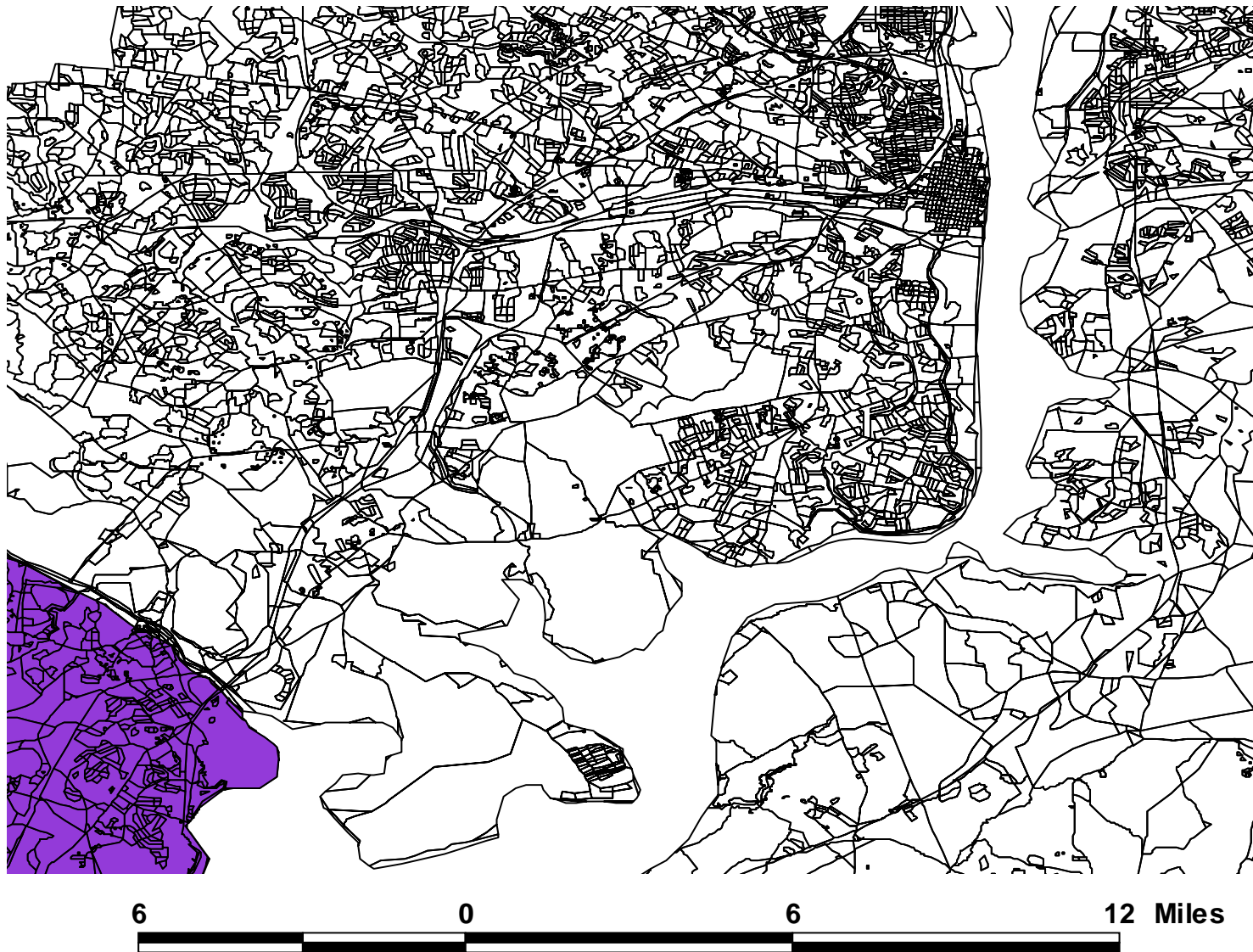
Road Data

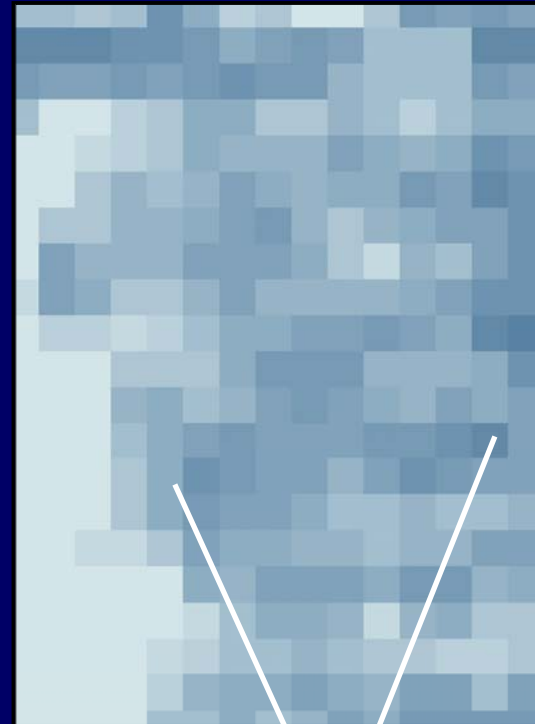




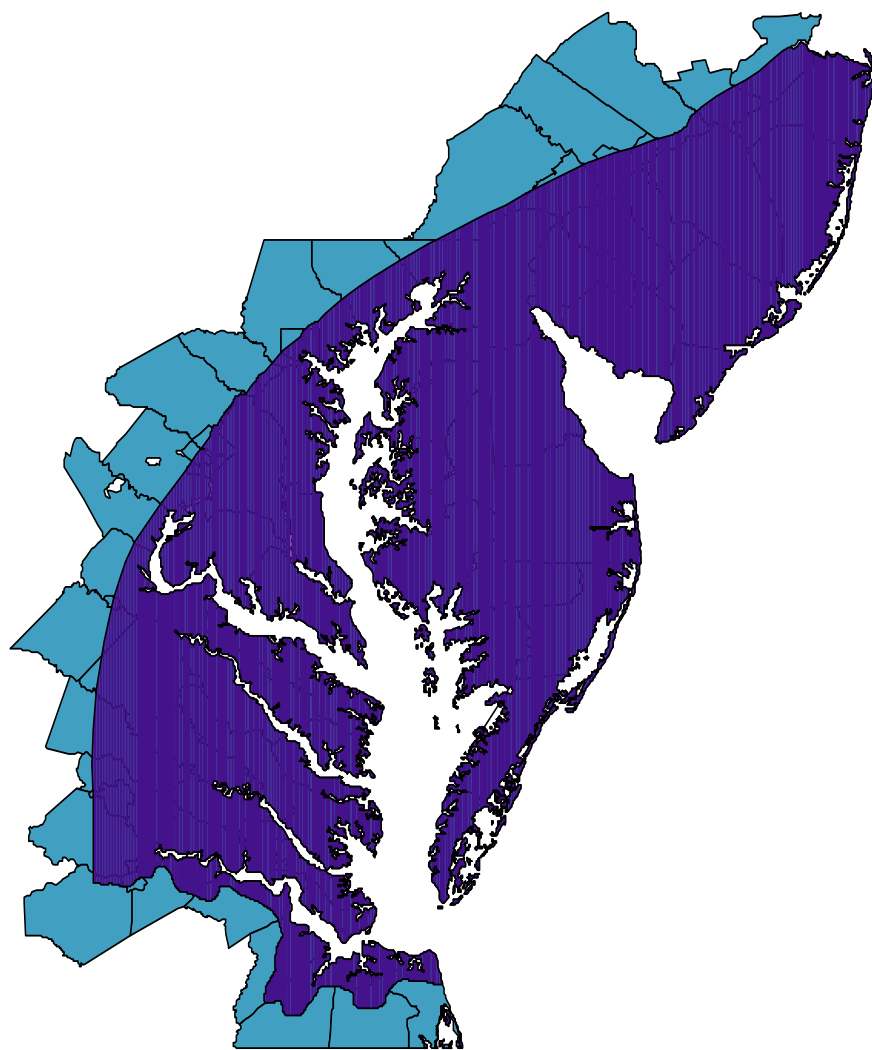
National Aeronautics
and Space Administration

Census Data





**Each cell represents
Percent cover of
Impervious surface**



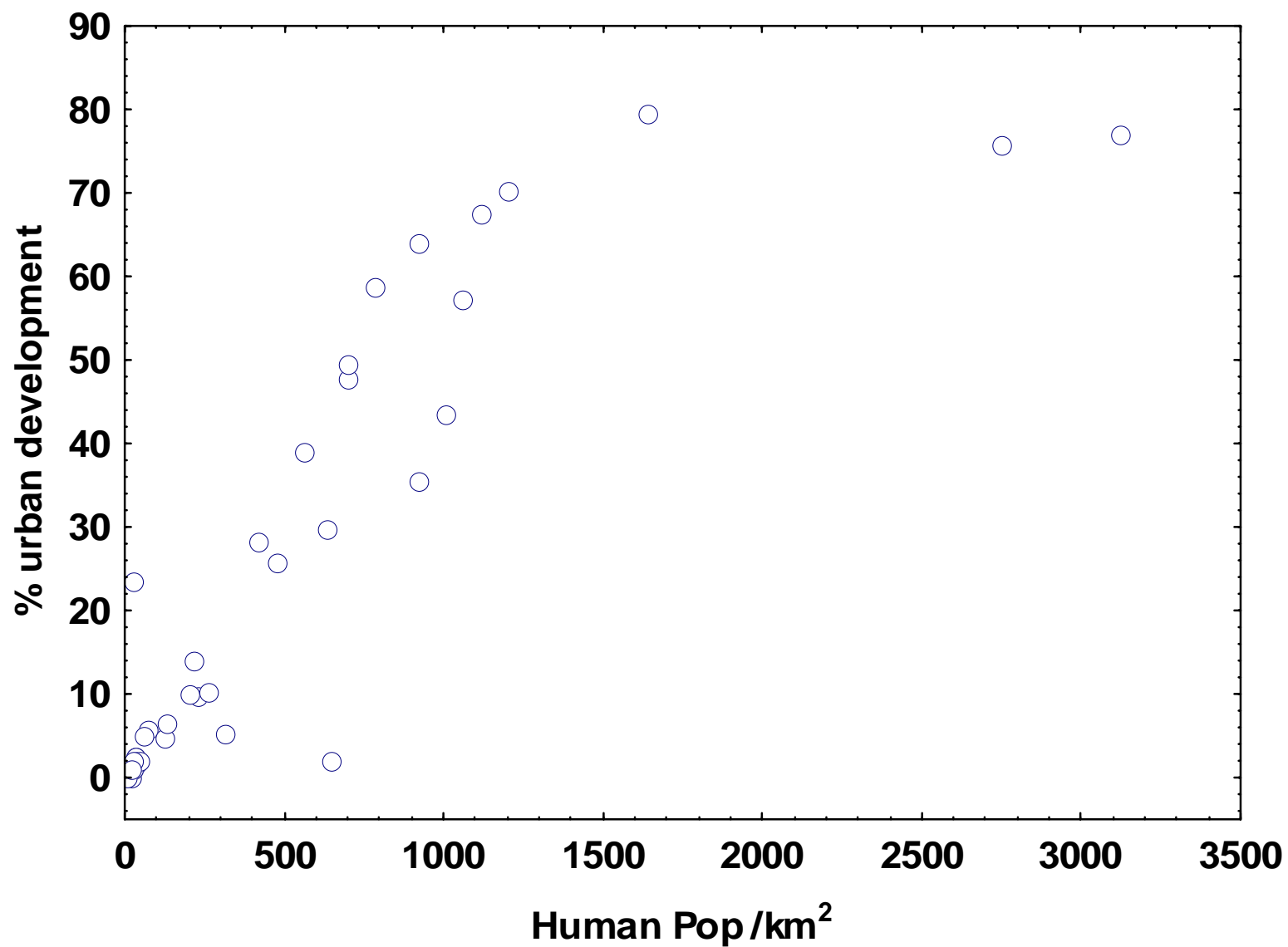
**Determine the Relative Strength of Urbanization
As a Limiting Factor to Management**



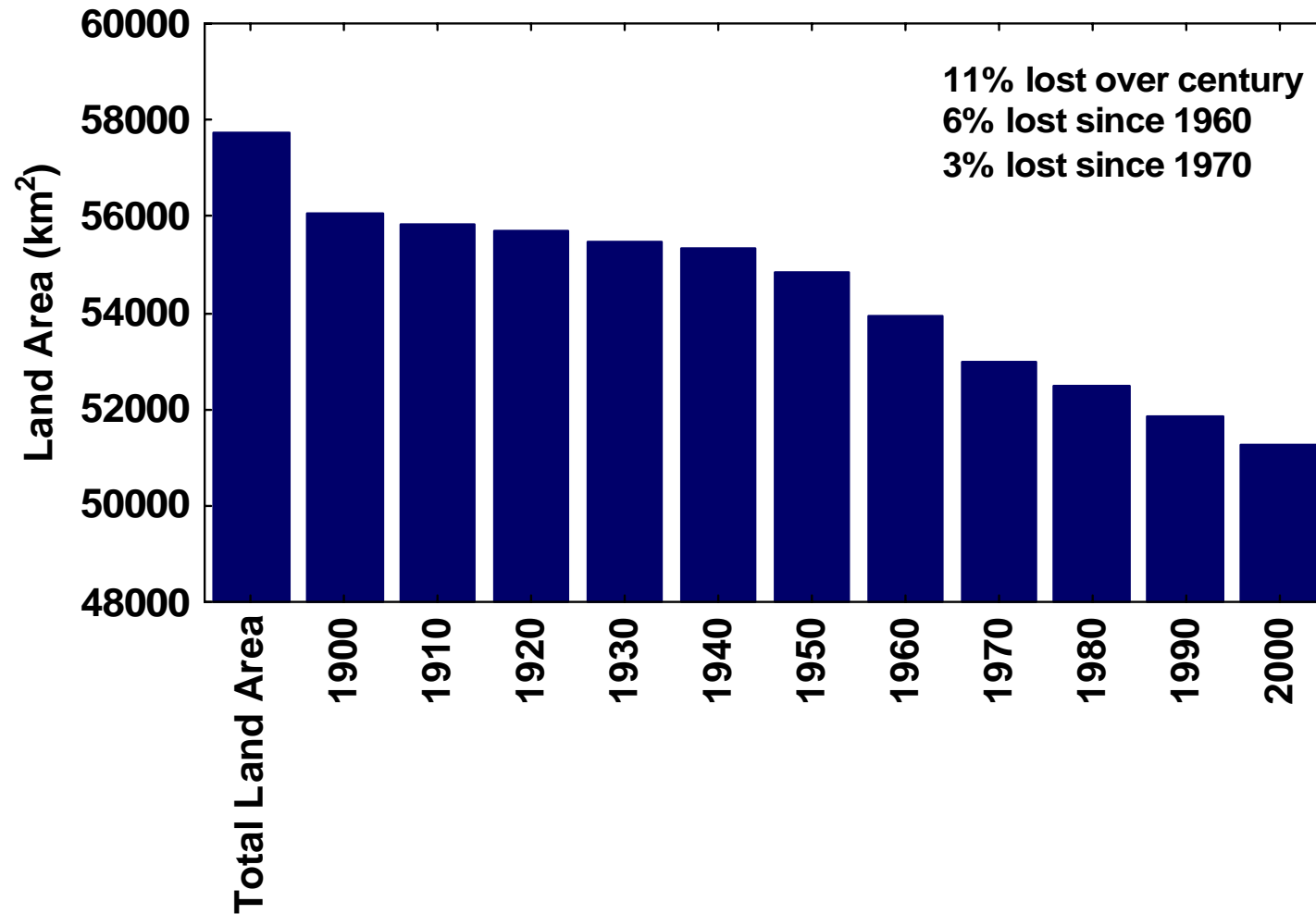
**Evaluate a cross-sectional
relationship between population size
to predict urban consumption**



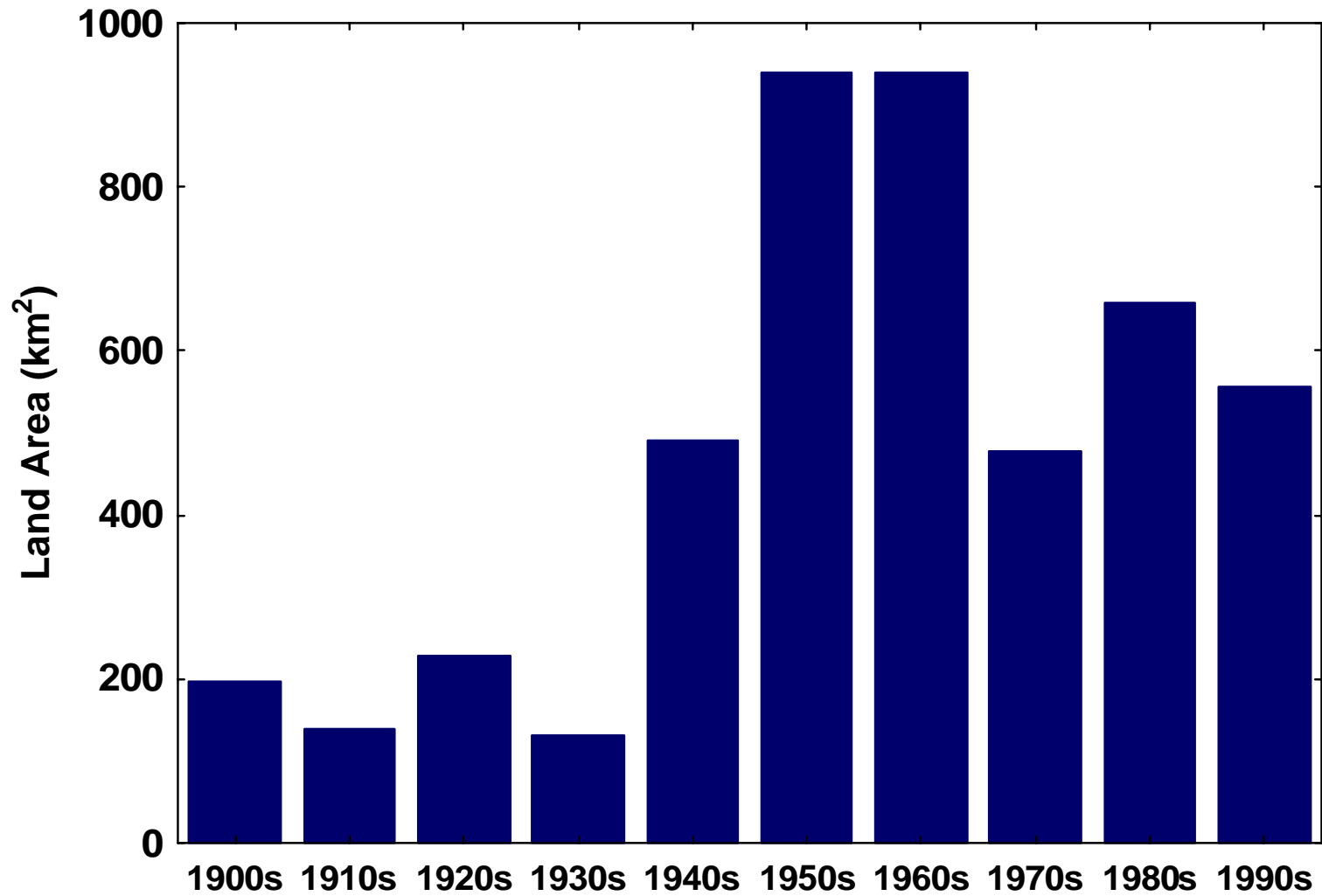
**Use this relationship to hindcast
and forecast patterns of land lost to urbanization**



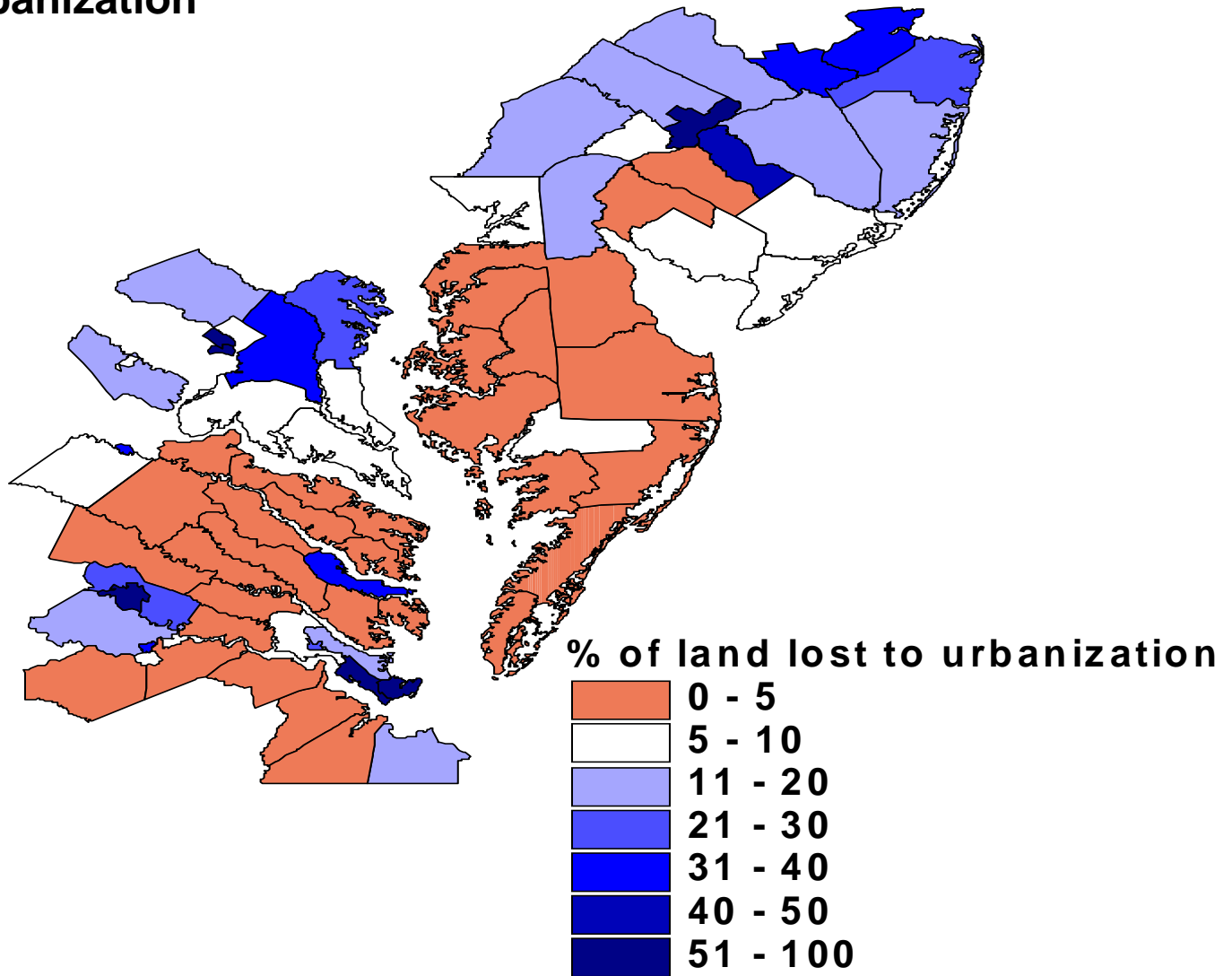
Decline in Undeveloped Land



Area Lost per Decade

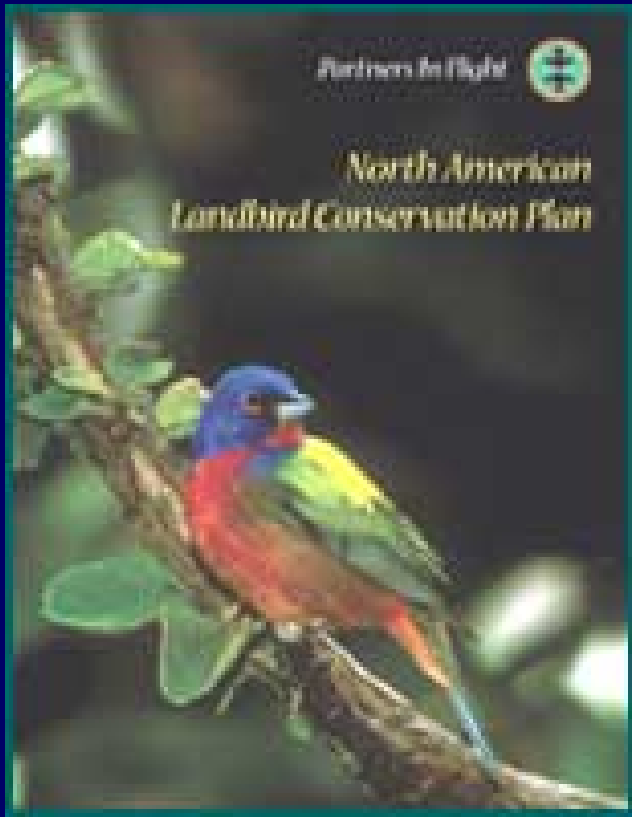


Total Losses from land base due to urbanization



Partners in Flight Landbird Conservation Plan

Regional Population Goals & Habitat Objectives



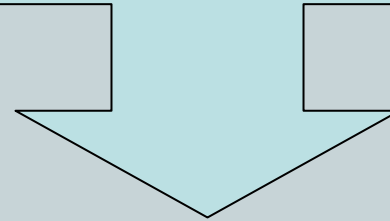
Increase 50%
Wood Thrush
White-eyed Vireo
Brown Thrasher
Prairie Warbler
Blue-winged Warbler
Indigo Bunting

Double Population
Eastern Meadowlark
Grasshopper Sparrow
Henslow's Sparrow
Field Sparrow

Maintain
White-eyed Vireo
Yellow-breasted Chat

Regional
Population
Goal

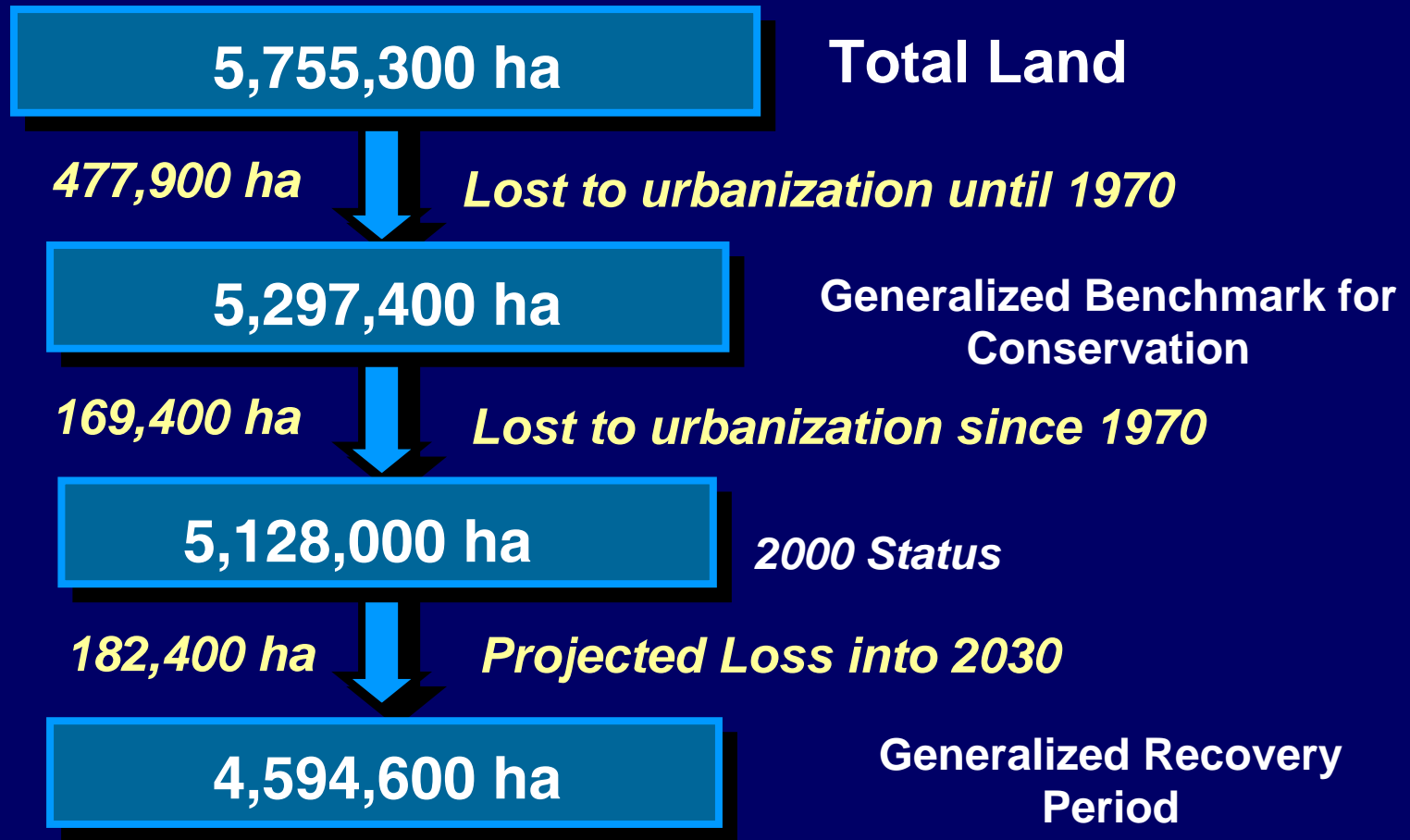
**Urbanization is an
ongoing process**



Current
Population
Estimate

Conservation Actions

**Increase protected habitat
Improve habitat
Create / restore habitat**



Wood Thrush goals = 454,000 ha

Grasshopper Sparrow goals = 51,000 ha

70% of land lost since benchmark

40% of land expected to loose before recovery